

REMARKS

After entry of this amendment, claims 12, 16-30, 34-40, 49, 56, 58, 73, and 76-80, 83-86 are pending and rejected. Claims 81, 82 and 87-89 have been canceled without prejudice. Applicants reserve their right to prosecution subject matter of canceled claims in subsequent applications.

Claim 12 has been amended to recite that the RNA fragment is at least 452 nucleotides. Support is in the specification on page 42, lines 26-29. Claim 12 has also been amended to recite a method for conferring resistance or tolerance to more than one virus selected from the group consisting of a furovirus, potyvirus, tospovirus and cucumovirus upon a plant cell comprising the step of: introducing into a plant cell a first DNA sequence encoding a sense RNA fragment of more than one virus from a furovirus, potyvirus, tospovirus or cucumovirus genome or portion thereof and a second DNA sequence encoding an antisense RNA fragment of more than one virus from a furovirus, potyvirus, tospovirus or cucumovirus genome or portion thereof, wherein said sense RNA fragment and said antisense RNA fragment form a double-stranded RNA molecule when expressed in a plant cell, wherein the fragments of RNA are at least 452 nucleotides in length and wherein the expression of said viral genomes or portions thereof in said cell is reduced, and wherein said plant cell has resistance or tolerance to more than one virus selected from the group consisting of furovirus, potyvirus, tospovirus and cucumovirus, respectively. Support is in the specification on page 18, paragraph 2.

No new matter has been added by these amendments.

Specification

The application recites co-pending application numbers on pages 13 and 18. The specification has been amended to indicate whether the application are abandoned, allowed or issued and any patent number.

Claim Rejection under Section 112, first paragraph

Claims 12, 16-30, 34-40, 49, 56, 58, 62, 73 and 76-89 are rejected under 35 U.S.C. § 112, first paragraph, as allegedly containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the art that the inventor(s), at the time the application was filed, had possession of the claimed invention. In particular, the Office action contends that the sequence of the BNYVV RNA1 was not provided because the database containing the accession no. DO0115 was not proved to be available as of the filing date of this application. Further, the office action points out that the specification does not provide support for the recitation of "at least 21 nucleotides in length".

Applicants respectfully disagree with this rejection.

Claims 81, 82 and 87-89 are canceled making this rejection moot.

The BNYVV RNA1 nucleotide sequence was available to those of ordinary skill in the art who would have known to search the available publications on the BNYVV virus genome sequences that were published by Bouzoubaa et al. J. Gen Virol. 68:615-26 (1987) (previously submitted) was originally published in 1987, and originally submitted to Genbank having accession no. D00115 in 1993. This sequence was available before the filing date of the priority application on May 26, 1998. Therefore, the nucleotide sequence of the BNYVV virus was available to those of ordinary skill in the art by searching the available databases.

Regarding the lower limit for fragment size to produce RNA silencing, claim 12 has been amended to recite the lower limit of at least 452 nucleotides as described in the specification in Example 9 on page 42.

Regarding the rejection of claims 81, 82 and 87-89, Applicants respectfully disagree, however, in order to advance prosecution of certain embodiments of the invention, claims 81, 82 and 87-89 have been canceled without prejudice.

These amendments and remarks overcome these rejections, and applicants respectfully request their withdrawal.

Claim Rejection under Section 112, first paragraph

Claims 12, 16-30, 34-40, 49, 56, 58, 73 and 76-89 are rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the enablement requirement. Applicants respectfully disagree. However, since claims 81, and 87-89 have been canceled, this rejection is moot as to those claims.

Regarding the issue of the BNYVV sequences recited in claim 82, Applicants have provided the sequence as published in the Journal of General Virology in 1987, prior to the filing date of this application. Thus, claim 82 is enabled.

Regarding the issue concerning the size of the portion of the viral genome, claim 12 has been amended to recite "at least 452 nucleotides" which is enabled and described by the specification as filed.

Claims 81, 82 and 87-89 are canceled, thereby making this rejection moot.

These remarks and amendments overcome these rejections.

Claims Rejections under 35 USC §103

Claims 12, 16-30, 34-40, 49, 56, 58 73, 76-80, and 83-89 are rejected under 35 USC § 103(a) as allegedly being unpatentable over Fire et al. (US Patent No. 6,506,559) in combination with de Haan et al. (J. Gen. Virol. 1991, 71:2207-2216), Maiss et al. (J. Gen. Virol. 1989, 70:513-24), Saito et al. (Arch. Virol. 1996, 141:2163-075), Hsu et al. (Arch. Virol. 1995, 140:1841-47), Miki et al. (Procedures for Introducing Foreign DNA into Plants, In Methods in Plant Molecular Biology

and Biotechnology, 1993) and Balcombe, D.C. (Plant Cell 8:1833-44, 1996), Applicants admitted state of the prior art, and Keddie et al. (Plant Mol. Biol. 1994, 24:327-340).

A finding of obviousness under § 103 requires a determination of the scope and content of the prior art, the level of ordinary skill in the art, the differences between the claimed subject matter and the prior art, and whether the differences are such that the subject matter as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made. Graham v. Deere, 383 U.S. 1 (1966). The relevant inquiry is whether the prior art suggest the invention, and whether the prior art provides one of ordinary skill in the art with a reasonable expectation of success. In re O'Farrell 853 F.2d 894, 903 (Fed. Cir. 1988). Both the suggestion and the reasonable expectation of success must be founded in the prior art and not in the Applicants' disclosure. In re Vaeck 947 F.2d 488 (Fed. Cir. 1991).

The cited references do not make obvious the presently claimed invention.

Most important, "obvious to try" a particular experiment or combination is not the appropriate standard for determining obviousness. In re Lindell, 385F.2d 453, 15 U.S.P.Q. 521 (C.C.P.A. 1967).

Applicants respectfully disagree with this rejection. The presently amended claims recite that the method is to make plants resistant or tolerant to more than one virus selected from the specified group of viruses by expression of dsRNA from more than one virus of the listed virus families.

Fire does not describe or teach resistance to multiple viruses by expression of dsRNA from multiple virus genomes or portions thereof from the listed virus families, and therefore, does not make obvious the present claims.

Claims 87-89 are canceled thereby making this rejection moot.

The above remarks overcome this rejection and Applicants request its withdrawal.

CONCLUSION

The above amendments and remarks overcome or obviate the above rejections and put the application in form for allowance.

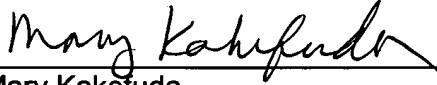
The Commissioner is hereby authorized to charge any additional fees under 37 CFR §1.17

that may be required, or credit any overpayment, to Account No. 50-1744 in the name of Syngenta.

Respectfully submitted,

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Date: 8/8/05



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